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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/825,839 | 04/15/2004 | Lee Teck Kheng | MI22-2460 | 9446 |
| 21567 | 7590 | 12/02/2005 | EXAMINER | |
| WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201 | | | LE, THAO X | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2814 | |

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/825,839 | KHENG, LEE TECK | |
| | Examiner | Art Unit | |
| | Thao X. Le | 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement

1. Applicant's cancellation of claims 6-56 in the amendment filed 26 October 2005 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5527741 to Cole et al.

Regarding claim 1, Cole discloses a semiconductor package in fig. 9, comprising a interposer construction containing only a single dielectric support member 38, col. 6 line 46, and comprising one or more conductive circuit traces 36, col. 6 line 47, contacting the single dielectric support member 38, a semiconductor die 16, col. 4 line 16, electrically connected with at least one of the traces 36; and the circuit traces 36 being between the semiconductor die 16 and the dielectric support member 38.

Regarding claims 2-4, Cole discloses the semiconductor package wherein the support member 38 is photo mask material or not a photo mask material, col. 3 lines 15-30, wherein the one or more circuit traces 36 comprises copper, col. 3 line 49.

Regarding claim 5, Cole discloses the semiconductor package wherein the dielectric support member 38 is patterned to have openings 32, col. 6 line 56, extending therein, the package further comprising one or more electrically-conductive connectors 34 within one or more of the opening 32 and in electrical connection with the one or more circuit traces 36, fig. 9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (APA) in view of US 5527741 to Cole et al.

Regarding claim 1, APA discloses a semiconductor package in fig. 1, comprising an interposer construction containing a dielectric support member 20, spec. [0004], and comprising one or more conductive circuit traces 17 [[0005], contacting the dielectric support member 20, a semiconductor die 12 [0004] electrically connected with at least one of the traces 17; and the circuit traces 17 being between the semiconductor die 12 and the dielectric support member 20.

But APA does not disclose an interposer construction containing only a single dielectric support member.

However, Cole discloses a semiconductor package in fig. 9 comprising an interposer construction containing only a single dielectric support member 38. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the single dielectric support member teaching of Cole with APA's package, because it would have created a flexible interconnect structure as taught by Cole in col. 2 lines 45-50.

Regarding claim 5, APA discloses the semiconductor package wherein the dielectric support member 20 is patterned to have opening extending therein, fig. 1, the package further comprising one or more electrically-conductive connectors 32/34/36 [0006] within one or more of the opening and in electrical connection with the one or more circuit traces 17, fig. 1.

Regarding claim 6, APA discloses the semiconductor package wherein the electrical conductive connectors are solder balls 36 [0007].

Regarding claim, APA discloses the semiconductor package wherein the dielectric support member 20 is patterned to have openings extending therein, the package further comprising: contact pads 32 [0006] within one or more of the openings and in electrical connection with the one or more circuit traces 17; and solder balls 36 [0007] in electrical connection with the contact pads 32

Regarding claim 8, APA discloses the semiconductor package wherein the dielectric support member 20 has a slit 50 [0010] extending therethrough; the dielectric support member 20 has one or more openings extending therethrough for electrical connection to the one or more circuit traces 17; and the electrical connection of the

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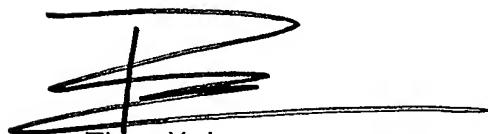
semiconductor die 12, fig. 1, to said at least one of the circuit traces 17 includes one or more wire bonds 46 [0008] extending from the die 12, through the slit 50, and into at least one of the openings, fig. 1.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'Thao X. Le', with a long horizontal line extending to the right.

Thao X. Le
17 Nov. 2005